The Roots of young trees are to be preferred before the roots of older trees, becauſe they will be more apt to take in ſap and nouriſh the branch grafted into them.

The beſt roots of all, are thoſe that come of kernels, which may be drawn at one, two or three years old, according to their growth. One plant muſt yield ſeveral Roots according to its bigneſs.

The Informer aſſures us, that 29 years ſince he ſowed a bed of apple-kernels in *March*, in which year he planted an Orchard of Apple-trees and Pear-trees that coſt 12.*d.* the tree. The ſpring following he pluckt up 40 of thoſe ſeedlings, grown to the thickneſs of a fair graft, he grafted them in this manner of tongue-grafting, and planted them again. They all grew, and four of them bore fruit to perfection that year; ſo that in a year and half from an apple-kernel he had ripe fruit. Four of thoſe trees, bought at 12*d.* the tree, died; for want of a better ſupply, four of theſe trees thus grafted were planted in the rooms of thoſe which died. Theſe four trees will now bear two quarters of apples upon a tree; and are bigger than moſt of thoſe trees amongſt which they ſtand, which coſt 12.*d.* the tree, when theſe were Kernels. He doth conceive, that plumbs, cherries, apricotts, peaches, and all ſorts of fruit-trees may be thus raiſed; but he hath not made an Experiment any further then upon apples and pears.

If any deſire to be further ſatisfied of the executive part of this, and the ſucceſs of it, they may repair to *Totnam High-Croſs* four miles from *London* in the road to *Ware*, where they themſelves may ſee this performed.

An Accompt of ſome Books.

II. *Chriſtiani Hugenii Zulichemii* HOROLOGIUM OSCILLATORIUM. *Pariſiis*, 1673. *in fol.*

THIS eminent Mathematician divideth this Treatiſe into Five parts, of which,

The *Firſt* containeth his deſcription of the Pendulum Watch.

The

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The *Second* treats of the deſcent of Heavy bodies, and their Motion in a *Cycloid*, that is, in a Line, which a Nail, faſtn'd in the circumference of a running wheel, by its continued circum-rotation deſigneth in the Air.

The *Third*, of the Evolution and Dimenſion of Curve Lines.

The *Fourth*, of the Center of Vibration.

The *Fifth*, of the conſtruction of an other Watch, wherein the Pendulum moveth *Circularly*, together with ſome Theorems *de Vi Centrifuga*.

Why the Author hath joyned all theſe matters together in this Book, will appear from his own diſcourſe premiſed in the beginning of the ſame. It ſeems then, that having, ſince the publication of his firſt Tract concerning the Watches by him invented, found many things relating to the perfection of that work, he thought good to gratify the publick with them; eſpecially ſeeing that theſe Particulars are by him lookt upon as the main, and, as 'twere, the ground of this whole Mechaniſm; which before it was deſtitute of. For, a ſimple *Pendulum* being no Certain and Equal Meaſure of time, in regard that larger excurſions are obſerv'd to be ſlower than the narrower, he hath by the aid of Geometry lighted upon a way of ſuſpending the *Pendulum*, by finding out a certain Curve Line, that is appropriate to give it that deſired Equality, which having applied to Watches, their Motion hath by this means been rendred ſo conſtant and certain, that by frequent Experiments they are now known to be exceedingly uſeful both in Aſtronomy and Navigation. This being the *Cycloid* abovementioned, our Author maketh it his chief buſineſs in this Treatiſe to give a very accurate demonſtration thereof. To which he thought it requiſite to premiſe ſome new Demonſtrations to eſtabliſh and advance the Doctrine of *Galilæi* touching the *Deſcent* of *Heavy bodies*, the top-fruit of which he counts to be this very propriety of the *Cycloid*.

But then that this Cycloid might be adapted to the Uſe of *Pendulums*, he thought himſelf obliged to enter upon a new conſideration of Curve Lines, *viz.* of thoſe, which by their Evolution generate other Curves. Whence reſulted the compariſon of the length of Curve lines with Streight ones; which argument, by reaſon of its excellency and novelty, he acknowledges to have proſecuted further, than his preſent deſign required. Where occurs the way of finding a ſtreight line equal to a *Paraboloid*, invented by that intelligent *Engliſh* Gentleman *William Neile*, ſince ſnatch't from us by an untimely death, to the exceeding great regrett of thoſe that knew his worth.

Beſides, for the clearer explication of the nature of the Compounded *Pendulum*, the uſefulneſs whereof he ſhews in the conſtruction of theſe *Automata*, he thought fit to ſubjoyn thereunto the ſpeculation of the *Centers of Agitation*; in which occurr many conſiderable Theorems, appertaining to linear, plain and ſolid figures.

To all which he promiſes the Mechanical Structure of the Watch, and the Application of the *Pendulum* thereto; enriching that part with his Table of the *Æquation of Dayes*, as alſo with a Relation of the ſeveral ſucceſſes of ſuch Watches employed in conſiderable ſea-voyages; of which *he ſaith* the beſt of all hath been, which was found in the Expedition of the late Duke of *Beaufort* into *Candia*, who having taken with him in his own ſhip two of thoſe Watches, and appointed a good Aſtronomer to take care of them; The longitudes of the places, which they either touched at in that voyage, or which in paſſing by they could ſee, were by means of the ſaid watches exactly meaſured, ſo as that the very ſame differences of longitudes were found by the accurateſt Maps aſſigned to thoſe places.

But ſince thoſe Tryals, our Author affirms to have improved his watches by uſing a *Pendulum* of a Triangular figure, and by another way of ſuſpending them: of which he gives an ample deſcription; to which we refer the Reader: concluding this account with taking notice of his *Univerſal* and *Perpetual Meaſure*, which he eſtabliſheth by exactly taking the meaſure of the diſtance from the point of ſuſpenſion to the center of agitation of a ſimple *Pendulum* vibrating a ſecond of Time; which being found to be ſuch a length as being divided into three equal parts will make ſuch a meaſure, as he calls an

Horary foot, which having ſuch or ſuch a proportion to all other Feet, may be uſed to ſettle a conſtant and certain meaſure every where, and to recover it in all ages; Foraſmuch as Time will be always and in all places the ſame, and conſequently ſuch a length being taken as exactly equals a ſecond of Time, a juſt Univerſal Meaſure is obtained.

II. *MODERN FORTIFICATION*, &c. *By Sir* Jonas Moor *Maſter ſurveyer of his Majeſties Ordnance.* London 1673. in 8°.

THE Worthy and Intelligent Author of this Book comprehends in a ſmall volume whatever hath been deſigned and practiſed by the Lateſt and moſt Experienced Ingineers of this Age, *Italian*, *French*, *Dutch* and *Engliſh*; and the manner of Defending and Beſieging *FORTS* and other *PLACES*; together with the Uſe of a *Joynt-Ruler* or *Sector* for the ſpeedy deſcription of any Fortification. All which he doth by ſuch eaſy Rules, as if he had calculated this his Treatiſe for the meaneſt Capacities.

He divides the Book into 8. Chapters.

The *firſt* contains certain Propoſitions neceſſary to be known before-hand, borrow'd from Geometry; as alſo his way of taking the Plat of any Town or Place, together with his great care in reconciling the differences of *Meaſures* of ſeveral Countries, found in the Tables of *Snellius*, *Dogen*, *Greaves*, *Ricciolus*, &c; and particularly in comparing the *Engliſh* Foot with the famous Meaſures of other Places; mentioning withal *Mouton's* Univerſal Foot, or a *Pendulum* that will vibrate 132 times in a minute of Time.

The *Second* treats of the moſt Modern Fortifications of *regular* Figures; where the Author, diſcourſing of Count *Pagan's* way, wherein the *Flank* ſtands at right Angles with the Line of *defence*, takes notice, that this way hath been not only approved, but much facilitated by his Majeſty of *Great Britain*, *CHARLES* II.

The *third* teaches the Uſes of the *Joynt-ruler*, among which thoſe are very conſiderable ones, that it contains not only a Table ſhewing, what weight of Powder is allowed for Proof

of

of all Guns caſt in *England*; but alſo the weights of the Shot in Iron for the ſeveral ſizes of Guns, together with the weight of the Powder allow'd to each Sea-gunner for ſervice. Where the Author inſerts a very neceſſary and uſeful Advice to this purpoſe, *viz.* That if the Sea-Captains would ſeriouſly concern themſelves in employing truſty perſons to ſee the Cartridges juſtly filled with the appointed Allowance, and at their leaſure to turn the Powder out of ſome Cartridges already fitted, and weigh it, to ſee that the Gunner wrong not their Guns, they would find their Bullets fly further, and do more execution. Adding this remarkable note, that the Officers of the Ordnance know that Powder proved Tower-proof is a fifth part ſtronger than any *Dutch* powder that hath been brought thither.

The *fourth* treats of Rampires, Parapets, Tenailus, Motes, Covert-wayes, and their ſeveral Dimenſions and Meaſures; together with the whole way of laying down the *Profile*; as alſo the Rules how to caſt up the Solidity of a *Rampire* and its *Parapet*, together with the Parapet of the *Covert way* beyond the *Counter ſcarp*, and thereby to proportion the Wideneſs and Depth of the Mote, that ſufficient Earth may be gotten out of the ſame. Where is annexed the way of building up a Fort, and alſo the Eſtimate to be made of the Charges that will be required to do the ſame. To which is added a deſcription of the works uſually made both within and without *Forts*; as alſo the manner of deſcribing upon Paper, by way of Perſpective, the aforeſaid Works.

The *Fifth* contains the doctrine of *Irregular* Fortifications; by which it appears, that 'tis requiſit, an Ingineer ſhould make firſt a Plot of the whole Ground to be fortified, with all the ways, paſſages, old walls (if there be any) Rivers, Pools, Encloſures and all other matter fit to be known in the draught; which done, he may then deſign what works he ſhall think moſt agreeing to the place.

The *Sixth* teaches the way how to defend a Fort; and in order to it, how a Governor ought to be qualified; and what ſtrength and number of Men, Victuals, Ammunition, and Inſtruments of war are neceſſary for its defence.

The *Seventh* treats of the way of *Beſieging* places, by blocking up, breaking of Ground, opening of trenches, building of Batteries, bringing on Galleries, and Mining.

The *eighth* delivers in *Engliſh* a ſhort Diſcourſe written in *French* by Monſieur *de la Mont*, of Fortification offenſive and defenſive, printed at *Paris* 1671. To which is annexed the *Table* of *Angles* taken out of Count *Pagan*.

So much of this Tract; which, we hope, will in due time, be follow'd by that large and coſtly piece, the Author ſaith in the *Epiſtle Dedicatory* he is now preparing, of all the *Forms* of *Fortifications*, and *Modles* of all ſorts of *Engins of war*, of what nature ſoever, in fair Prints, that have been made or invented to this day: A very deſirable work, the haſtening of which is very much wiſh't by the Curious.

III. *The Elements of that Mathematical Science call'd* Algebra, *by* John Kerſey. London 1673. *an. in fol.*

IN N°. 90. of theſe Tracts, an *Advertiſement* was given of a Body of *Algebra* prepared for the Preſs by that eminent Algebraiſt Mr. *John Kerſey*, conſiſting of four Books. We now give notice to the Reader, that the *Two* firſt of them are ſince actually printed and now expoſed to ſale. As for the Argument of them ſince a pretty large account was then rendred concerning them in the ſaid Tract, we ſhall now only acquaint the Reader;

Firſt, that the Author will be found to have ſo fully and plainly handled the matter, that an ordinary capacity without any other Teacher may attain this excellent knowledg, which extends itſelf through all the parts of the Mathematicks, being the very Art of Invention of innumerable Theorems and their Demonſtrations both in Arithmetick and all parts of Geometry, whether Plain, Curvi-linear, ſolid or local.

Secondly, that whereas many do wonder, why ſome forraign Nations are ſo fertile, and the Engliſh ſo barren of good Mathematical Books in their Mother-tongue, the reaſon thereof, and of the loſs of many mens laborious and excellent writings and inventions, is, that the Bookſellers being diſcouraged by the

ſlow-

ſlowneſs of ſale, are not willing to undertake the printing of them. Now that *Algebra* may not have the ſame fate, we have this to ſay from the Judgement of ſober and knowing Mathematicians, that there is not the like Collection of *Algebra* extant in Latin or any other Language, that we know of; whence this Book hath met with the approbation and applauſe of the moſt Learn'd in that Science: And if it find a ſutable acceptation, ſatisfactory to our Stationers, it will encourage them to haſten the *third* and *fourth* Parts, of which the *third* is a *Diophantus in Specieſ's* with many other excellent Problems of the like nature; and the *fourth* conſiſts *partly* of Geometrical Theorems and Problems (many whereof are practical in Menſuration,) *partly*, but principally, of the Analitical Calculation and Geometrical conſtructions of Problems ariſing thence, demonſtrated afterwards out of the Elements, according to the cuſtom of the Antients, concealing the Method of Invention, (as is aſſerted by many,) for the magnifying of their Inventions, as if there had been no ſuch thing as *Algebra* known or uſed.

Beſides, it will doubtleſs induce the Learned to communicate their Notions and Collections of much excellent knowledg that lyeth ſtrangely ſcatter'd in print in the moſt abſtruſe parts of Geometry, as in the Conical Doctrine, Angular Sections, Solid and Curvilinear Geometry, and Local determinations; about which we ſhall not further trouble the Reader or ourſelves, till we find the ſucceſs of this, which is now extant.

An addition to the above-related Experiments made with the Blood-ſtaunching liquor.

Since the above-recited Experiments were printed, the Publiſher received information, that with the ſame liquor there have been made two ſucceſsful Operations upon two ſeveral Perſons, a Woman and a Man, by applying it to the place, from whence a leg of each of them was cut off to prevent a gangrene. Of which the particulars not being yet given in, we muſt refer them to another opportunity, if they ſhall be found ſo conſiderable as to deſerve to be deſcribed at large.

Errata in this Numb. Pag. 6057. l. 18 r. *to decry.* ibid. l. 32. r. *of thoſe.*

London, Printed for *John Martin*, Printer to the *R. Society*. 1673.